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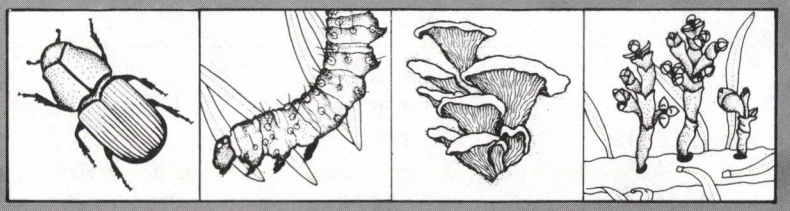

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DOUGLAS-FIR TUSSOCK MOTH ADULT MALE SURVEY NORTH IDAHO AND WESTERN MONTANA, 1982

by

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INTRODUCTION

Douglas-fir tussock moth 4/ populations are monitored annually in northern Idaho and western Montana to insure early detection of changes from endemic to outbreak population levels.

Adult moth trapping in 1982 was intensified and expanded into additional areas from 1981 because of concern that with each passing year the probability of a tussock moth outbreak is more imminent. Annual increases in trap catches from 1980 through 1982 and reports during the summer of 1982 of defoliated yard and farmstead trees at various locations strongly suggest that populations are building.

This report summarizes results of the 1982 adult population monitoring.

METHODS

The pattern of trap placement and retrieval used is that described by Daterman et al. (1979), and implemented in 1981 (Dewey et al. 1982). Five sticky traps, each baited with pheromone, were used at each trapping plot. A variation from 1981 involved using Clearwater and Nezperce National Forest personnel for placement and retrieval of many of the traps in 1982. Moth identification and counting were done in the laboratory by trained people. A catch averaging 25 or more moths per trap is considered indicative of a preoutbreak population.

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RESULTS

Survey plots were placed at 140 locations in the Northern Region in 1982. This compares to 85 plots in 1981 and 38 in 1980. The 1982 plots were located as follows: 15 in western Montana, 79 in Idaho south of Moscow and north of Riggins, and 46 plots in Idaho north of Moscow. Trap catches in 1982 were higher than 1981 catches at all three geographical locations. The greatest increases occurred in Idaho north of Moscow and in western Montana (table 1).

Table 1.--Number of trapping plots and total male moths captured from 1980-1982.

Location	1980	1981 1/	1981 2/	1982 3/	1982 4/
	# plots/ moths caught	# plots/ moths caught	# plots/ moths caught	# plots/ moths caught	# plots/ moths caught
W. Montana	8/10	8/971	4/327	12/2,237	2/442
Idaho, N. of Moscow	19/0	19/57	18/13	37/850	7/70
Idaho, S. of Moscow	11/3	11/63	24/352	35/506	44/519
TOTALS	38/13	38/1,091	46/692	84/3,593	53/1,031

1/ Original plots sampled in 1980.
2/ Additional plots sampled in 1981.
3/ All plots sampled in 1981.
4/ Additional plots sampled in 1982.

In 1981, the only plots with catches exceeding an average of 25 moths/trap were five in western Montana. In 1982, 10 western Montana plots, one plot in Idaho south of Moscow, and one plot north of Moscow had more than 25 moths/trap. Several other plots had trap catches averaging between 20 and 25 moths/trap (appendix 1).

During the winter of 1981-82, three of the five plots in western Montana having 25+ moths/trap were surveyed for coccoons. Two trained observers visually surveyed host trees on the plots for 15 minutes each. No coccoons were detected. In June 1982, those same five plots plus two others were surveyed for early instar larvae using the technique described by Mason (1979). Larvae were found at four of the plots but only at such numbers to classify the population level as "low".

DISCUSSION AND RECOMMENDATIONS

All indications are that Douglas-fir tussock moth populations are increasing at a relatively rapid rate in northern Idaho and western Montana. In addition to the increase in the trap catches since 1980,

incidences of yard and farmstead trees being defoliated increased sharply in 1982. Reports have been confirmed of defoliated ornamental trees in or near Missoula, Polson, and Sommers, Montana; and Coeur d'Alene, Hayden Lake, Genesee, Craigmont, Nezperce, and Green Creek, Idaho. New epidemics reported in neighboring Washington, Oregon, and British Columbia suggest even more that our populations are building.

Because tussock moth populations can be explosive, and because widespread tree injury can result from just 1 or 2 years of defoliation, it is imperative that managers be given the maximum amount of lead time to determine their management direction. Because of this, and because data is needed to refine and validate the entire population survey system and outbreak model, it is recommended that:

1. A coccoon survey be made during the winter of 1982-83 at those plots where average trap catches exceeded 25.

2. An early instar sequential sample be taken in the spring of 1983 at all plots where moth catches approached 25 or more, and at an equal number of plots with lower moth catches.

3. A sample be made of the large larvae in the summer of 1983 to estimate population density at selected sequential sampling locations.

4. An aerial survey be conducted of all areas of high trap catches, looking for defoliation during the late summer of 1983.

5. Continue pheromone trap monitoring of all previously established plots, adding any new areas of interest.

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Appendix 1 - 1980, 1981, and 1982 Trap Catches

Western Montana

Plot	Location	Average DFTM/trap		
		1980	1981	1982
Albert Cr.	S16, 14N, 21W	0	28.4	42.6
Big Arm	S36, 24N, 21W	-	3.0	9.4
Big Fork	S36, 27N, 19W	-	-	0.0
Butler Cr.	S24, 16N, 23W	0	26.2	45.2
Church Farm (Frenchtown F)	S10, 14N, 21W	.8	3.0	33.4
Corral Cr.	S36, 15N, 22W	.6	21.2	30.2
Frenchtown J	S22, 14N, 21W	.6	77.8	71.4
Frenchtown T	S23, 14N, 21W	-	52.4	78.4
Polson-Lost Lake	S17, 22N, 19W	-	10.0	48.2
Polson-Hellroaring	S33, 22N, 19W	-	0.0	6.4
Rocky Point (Jette Lake)	S 2, 23N, 21W	0	7.6	20.4
Rocky Point	S 4, 23N, 20W	0	3.0	9.4
Smith Camp	S 8, 25N, 20W	0	27.0	52.4
Sommers #1	S27, 27N, 21W	-	-	54.4
Sommers #2	S26, 27N, 20W	-	-	30.

Idaho South of Moscow

Plot	Location	Average DFTM/trap 1980	1981	1982
NEZPERCE NATIONAL FOREST				
Slate Cr. Ranger District				
Allison Cr.	S24, 15N 2E	-	-	.0
Christie Cr.	S 6, 26N, 1E	.0	2.8	13.2
Cow Cr. Saddle	S36, 26N, 1W	0	.4	.8
Dead Pt. Ridge	S15, 1N, 2E	-	-	.4
Foot Bridge	S 3, 1N, 3E	-	-	.4
Free Use	S20, 28N, 3E	0	1.6	.2
Little Slate Cr. Saddle	S33, 15N, 3E	-	-	.0
Shells Lick	S 6, 27N, 3E	0	.2	0
S. Fork Cow Cr.	S17, 25N, 1W	0	2.8	
Squaw Cr.	S14, 24N, 1W	-	-	5.6
Elk City Ranger District				
Mill	S33, 29N, 8E	-	-	.4
Mother Lode Hill	S 6, 30N, 8E	-	-	.6
Rumpus Cr.	S20, 30N, 8E	-	-	0
Red River Ranger District				
Siegel Hawk	S11, 28N, 9E	-	-	0
Schooner	S11, 27N, 9E	-	-	

Idaho South of Moscow

Plot	Location	Average DFTM/trap 1980	1981	1982
NEZPERCE NATIONAL FOREST, continued				
Clearwater Ranger District				
Bear Trap	S24, 29N, 3E	-	-	3.2
Blacktail	S 4, 29N 4E	-	-	.2
Clear Cr.	S34, 31N, 5E	0	0	0
Doe Cr. Rd.	S22, 39N, 5E	-	-	0
Fish Cr.	S16, 29N, 3E	0	0	0
Green Cr.	S11, 30N, 4E	-	-	.6
N. Meadow Camp	S24, 30N, 4E	-	-	5.0
Selway Ranger District				
Big Tinker	S26, 32N, 5E	.4	3.8	2.5
Lodge Point	S13, 32N, 6E	.2	.4	.0
Pine Knob	S26, 32N, 6E	0	.2	.2
Potato Hill	S29, 32N, 6E	0	.4	.0
CRAIG MOUNTAINS				
Black Pine Camp	S17, 33N, 3W	-	4.2	0
Cottonwood Butte	S33, 32N, 1W	-	0	0
Forest	S 1, 32N, 3W	-	8.6	0
Junction	S22, 32N, 4W	-	1.8	0
Keuterville	S 9, 31N, 1W	-	3.6	2.8
Lake Waha	S15, 33N, 4W	-	0	.8
Webb Cr.	S17, 33N, 3W	-	.4	0

Idaho South of Moscow

Plot	Location	Average DFTM/trap 1980	1981	1982
CLEARWATER NATIONAL FOREST				
Lochsa Ranger District				
Camp Moosehorn	S 4, 34N, 7E	-	3.6	0
Canyon Junction	S 4, 34N, 7E	-	6.8	.2
Fan Cr. Saddle	S36, 34N, 6E	-	4.2	.6
Mystery Cr.	S20, 34N, 7E	-	1.0	.2
Trout Cr.	S25, 34N, 6E	-	2.6	0
Pierce Ranger District				
Alder	S 8, 38N, 5E	-	-	.0
Bald Mtn.	S 5, 37N, 5E	-	-	22.0
Bargamin Cr.	S23, 37N, 4E	-	9.6	3.6
Charmook Ridge*	S21, 35N, 6E	-	-	1.2
Clearwater Gulch	S 4, 36N, 6E	-	-	1.4
Cooper	S12, 36N, 3E	-	3.0	7.2
Dewey Cr.*	S28, 36N, 6E	-	-	.2
Fohl	S 8, 36N, 5E	-	2.0	.4
French Cr.*	S26, 37N, 6E	-	-	.0
Grand Pit	S 6, 34N, 6E	-	-	.0
Grangemont	S24, 37N, 3E	-	2.0	14.0
Mud Cr.*	S34, 34N, 6E	-	-	.2
Musselshell*	S19, 35N, 6E	-	-	.0
O Mill	S23, 36N, 4E	-	1.4	1.4
Pierce*	S 2, 36N, 5E	-	-	.0
Rosebud*	S16, 36N, 6E	-	-	.0
Summit Landing	S36, 38N, 5E	-	-	22.0
Sylvan Saddle*	S27, 34N, 6E	-	-	.2

* - Traps with bait placed in "stickem" rather than on pin.

Idaho South of Moscow

Plot	Location	Average DFTM/trap 1980	1981	1982
CLEARWATER NATIONAL FOREST, continued				
Canyon Ranger District				
Angel Butte	S 3, 37N, 3E	-	2.2	7.6
Beaver Cr. Divide	S23, 39N, 5E	-	-	5.2
Beaver Cr. Flume	S 7, 40N, 7E	-	-	2.2
Bingo Cr.	S 5, 39N, 6E	-	-	4.2
Deer Cr.	S 6, 36N, 3E	-	2.0	4.4
Dent Bridge Rd.	S 2, 37N, 2E	-	.4	1.4
Huckleberry Mtn.	S17, 37N, 3E	-	1.4	2.0
Johnson	S 9, 37N, 3E	-	9.6	26.2
Moscow Bar Ridge	S27, 40N, 8E	-	-	8.6
Orofino	S 7, 36N, 1E	-	0	.4
Shin Point Sale	S21, 39N, 7e	-	-	10.4
Skull Cr.	S30, 41N, 9E	-	-	20.0
Swanson Cr.	S 4, 39N, 7E	-	-	16.2
Tumble Cr.	S 6, 38N, 7E	-	-	2.4
Wells Bench Rd	S23, 37N, 2E	-	0	.2

Idaho South of Moscow

Plot	Location	Average DFTM/trap 1980	1981	1982
CLEARWATER NATIONAL FOREST, continued				
Powell Ranger District				
Beavers Meadow Rd	S30, 37N, 15E	-	-	.2
Brushy Fork	S32, 38N, 16E	-	-	.0
Doe Ridge	S31, 37N, 13E	-	-	.8
Parachute Cr.	S20, 37N, 14E	-	-	.2
Post Office Cr.	S 8, 36N, 12E	-	-	.4
Powell Cr.	S33, 37N, 14E	-	-	.2
Saddle Camp Rd.	S 4, 37N, 11E	-	-	.0
Turkey Track	S14, 37N, 13E	-	-	.2

Idaho North of Moscow

Potlatch Ranger District Placed Traps				
Big Bear Cr.	S23, 41N, 2W	-	-	.4
Big Cr.	S 8, 42N, 3W	-	-	1.0
Bronsen Meadows	S34, 41N, 1W	-	-	.2
Corral Cr.	S25, 41N, 2W	-	-	.0
Crane Point	S23, 43N, 4W	-	-	2.4
Hog Meadow	S14, 40N, 1W	-	-	.5
Lost Wheelbarrow	S12, 42N, 4W	-	-	7.8
Three Tree Butte	S25, 43N, 3W	-	-	2.0

Idaho North of Moscow

Plot	Location	Average DFTM/trap 1980	1981	1982
State of Idaho Placed Traps				
Bald Mtn.*	S26, 34N, 2W	-	-	.2
Bedrock Gulch	S29, 43N, 3W	0	0	.8
Big Bear Creek*	S17, 40N, 2W	-	0	15.4
Big Meadow Creek*	S26, 40N, 4W	-	0	5.2
Caribou Creek	S17, 59N, 2W	0	0	0
Charles Butte	S32, 44N, 3W	0	2.0	15.8
City of Coeur d'Alene		0	0	.2
City of Moscow		0	0	2.8
Coeur d'Alene Mtn.	S14, 49N, 3W	0	0	1.4
Crane Creek*	S 8, 42N, 4W	-	0	5.2
East Dennis	S23, 43N, 3W	0	2	1.6
East Gold Hill	S13, 42N, 4W	0	.2	.2
East Twin Pt.*	S13, 40N, 5W	-	10	1.4
Elk Mtn.	S 8, 49N, 2W	0	0	1.6
Emida Peak		-	-	.2
Flannigan Creek*	S26, 41N, 5W	-	0	-
Flat Creek	S 4, 40N, 3W	0	1.2	24.4
Hatter Creek*	S22, 41N, 4W	-	0	-
Jerome Creek*	S33, 42N, 3W	-	0	-
Laird Park		-	-	.2
Lightning Creek	S36, 59N, 1W	0	0	.2
Little John Creek*	S20, 44N, 2W	-	0	1.8
Lolo Creek*	S28, 45N, 4W	-	2	-

* - Plots with only one trap in 1981.

Idaho North of Moscow

Plot	Location	Average DFTM/trap 1980	1981	1982
State of Idaho Placed Traps, continued				
Lolo Pass	S33, 45N, 4W	0	.4	13.4
Long Creek	S 4, 40N, 4W	0	1.4	35.2
Mica Mtn.*	S15, 41N, 2W	-	0	.6
Mineral Mtn.	S20, 43N, 4W	0	5.0	21.6
Mission Mtn.	S22, 43N, 5W	0	.6	2.0
Moses Mtn.		-	-	.2
N. Fk. Palouse River		-	-	0
North-South Ski Area*	S19, 43N, 2W	-	0	.4
Paradise Point	S10, 40N, 5W	0	.6	2.0
Peterson Point	S 2, 44N, 2W	0	.4	.2
Schwartz Creek*	S32, 41N, 2W	-	0	5.0
Sheep Creek*	S12, 43N, 5W	-	0	.4
Short Creek*	S 2, 43N, 2W	-	0	-
South Fork Little Plummer Creek		-	-	.8
Smith Meadows*	S14, 42N, 3W	-	0	-
Squaw Creek*	S14, 44N, 4W	-	1	2.0
Strychnine Creek*	S31, 42N, 2W	-	0	2.0
Town of Troy		0	0	-
W. Fk. Mission Creek*	S33, 43N, 5W	-	0	.4
Windfall Pass		-	-	4.8
Vassar Meadows	S35, 41N, 2W	0	0	4.0

* Plots with only one trap per plot in 1981.